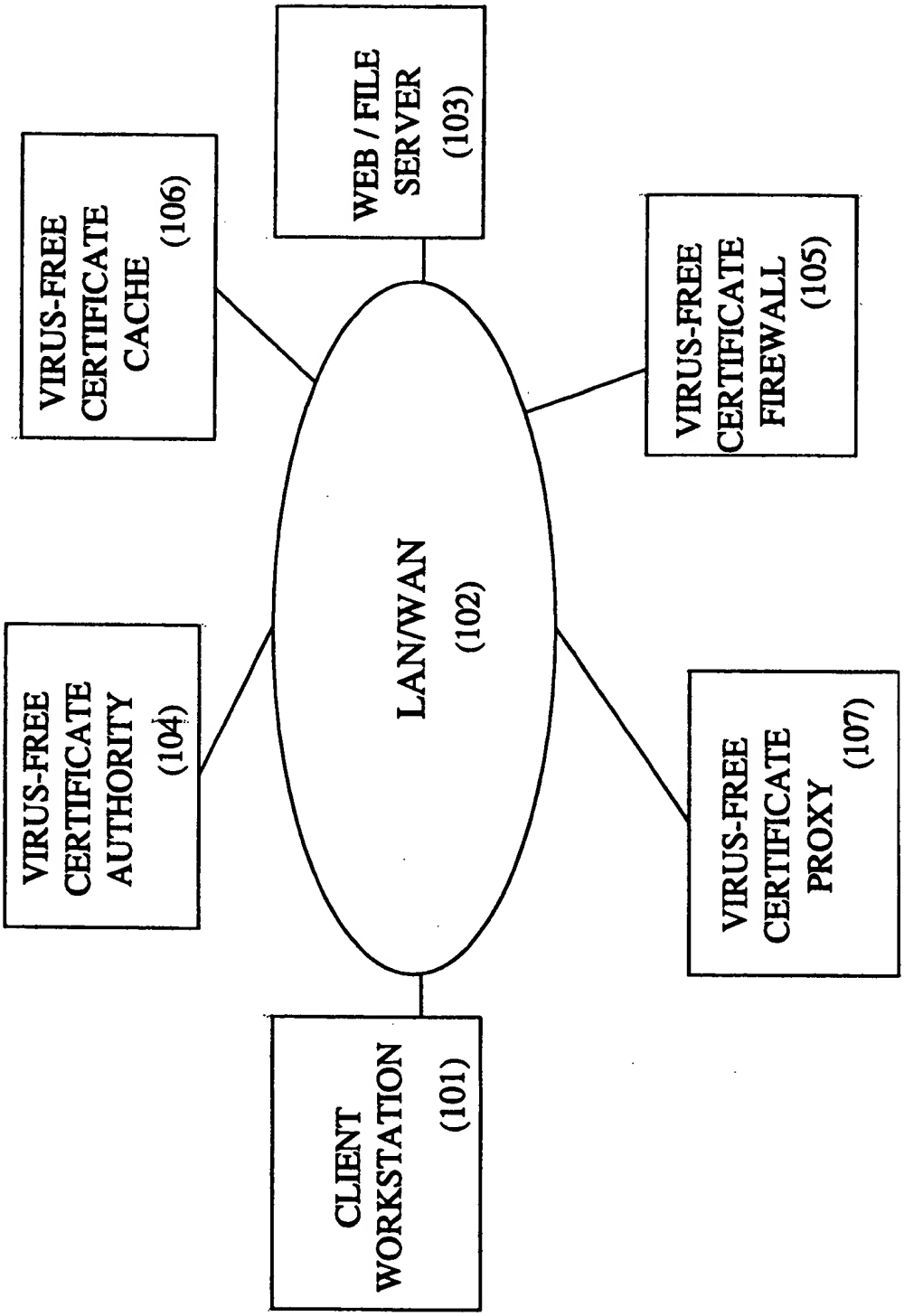
WEB / FILE SERVER (103)
VIRUS-FREE CERTIFICATE CACHE (106)
VIRUS-FREE CERTIFICATE FIREWALL (105)
LAN/WAN (102)
VIRUS-FREE CERTIFICATE AUTHORITY (104)
VIRUS-FREE CERTIFICATE PROXY (107)
CLIENT WORKSTATION (101)

FIG. 1

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VIRUS-FREE CERTIFICATE (200)

| | |
|---|---|
| (201) | FILE NAME |
| (202) | ISSUER |
| (203) | PUBLIC KEY VALUE |
| (204) | VALIDITY |
| (205) | SERIAL NUMBER |
| (206) | CERTIFICATE SIGNATURE |
| (207) | FILE SIGNATURE |
| (208) | ANTIVIRUS CHECKER 1 |
| | |
| | ANTIVIRUS CHECKER n |
| (209) | CERTIFICATE STRUCTURE |

FIG. 2

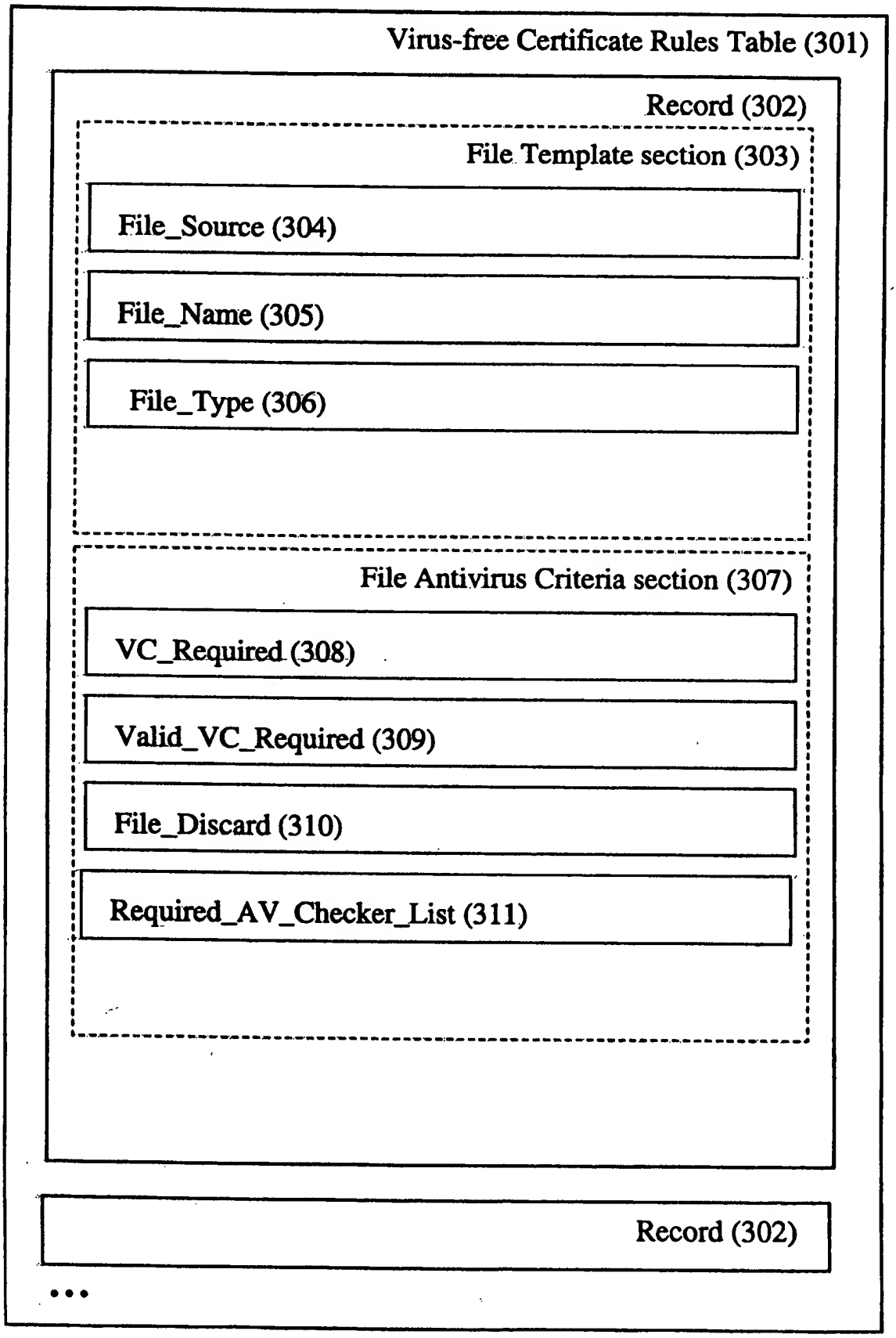
Virus-free Certificate Rules Table (301)
Record (302)
File Template section (303)
File_Source (304)
File_Name (305)
File_Type (306)
File Antivirus Criteria section (307)
VC_Required (308)
Valid_VC_Required (309)
File_Discard (310)
Required_AV_Checker_List (311)
Record (302)
...

FIG. 3

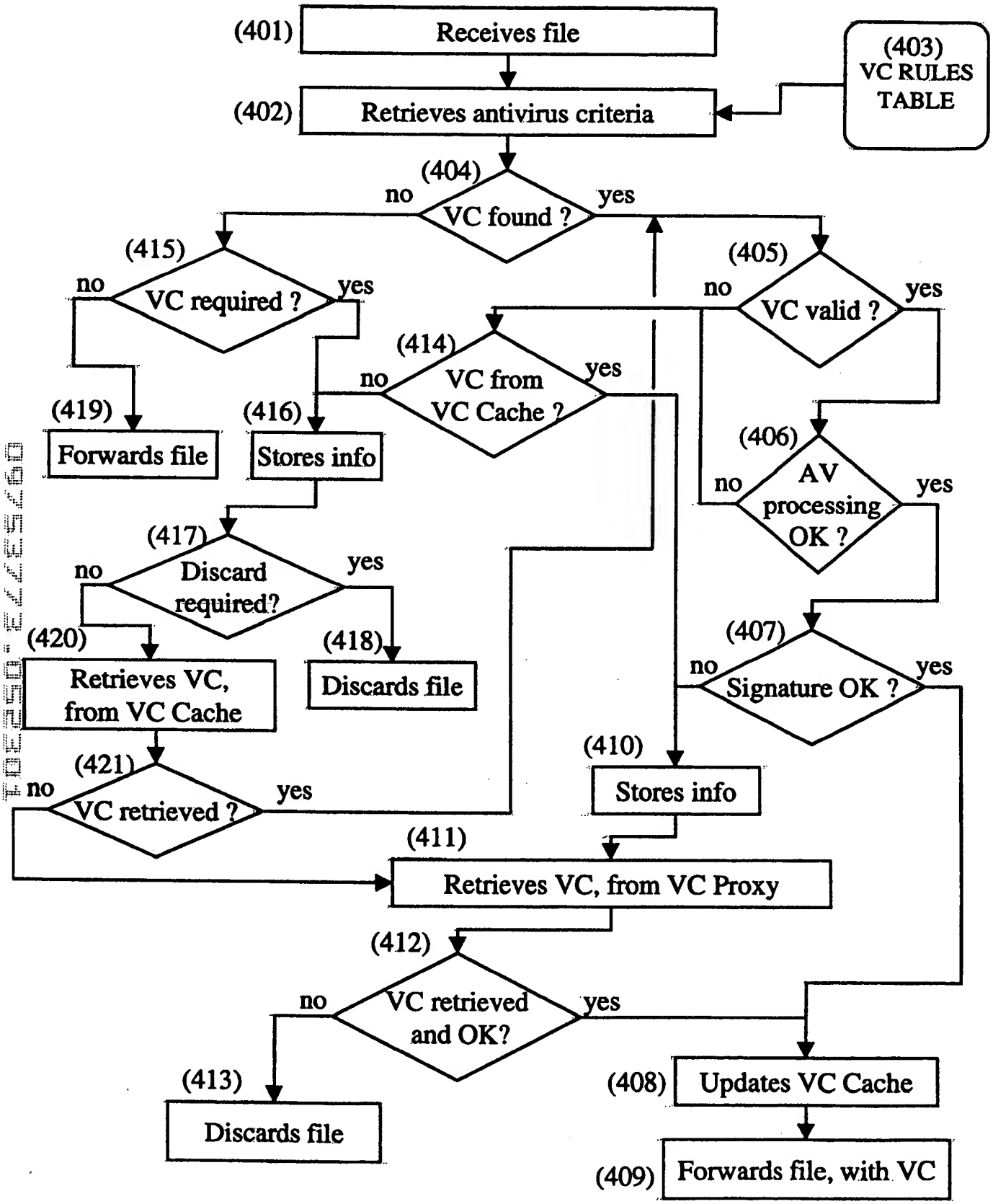
(401)
Receives file
(403)
VC RULES TABLE
(402)
Retrieves antivirus criteria
(404)
VC found ?
no
yes
(415)
VC required ?
no
yes
(405)
VC valid ?
no
yes
(414)
VC from VC Cache ?
no
yes
(419)
Forwards file
(416)
Stores info
(406)
AV processing OK ?
no
yes
(417)
Discard required?
no
yes
(420)
Retrieves VC, from VC Cache
(418)
Discards file
(407)
Signature OK ?
no
yes
(421)
VC retrieved ?
no
yes
(410)
Stores info
(411)
Retrieves VC, from VC Proxy
(412)
VC retrieved and OK?
no
yes
(413)
Discards file
(408)
Updates VC Cache
(409)
Forwards file, with VC

FIG. 4

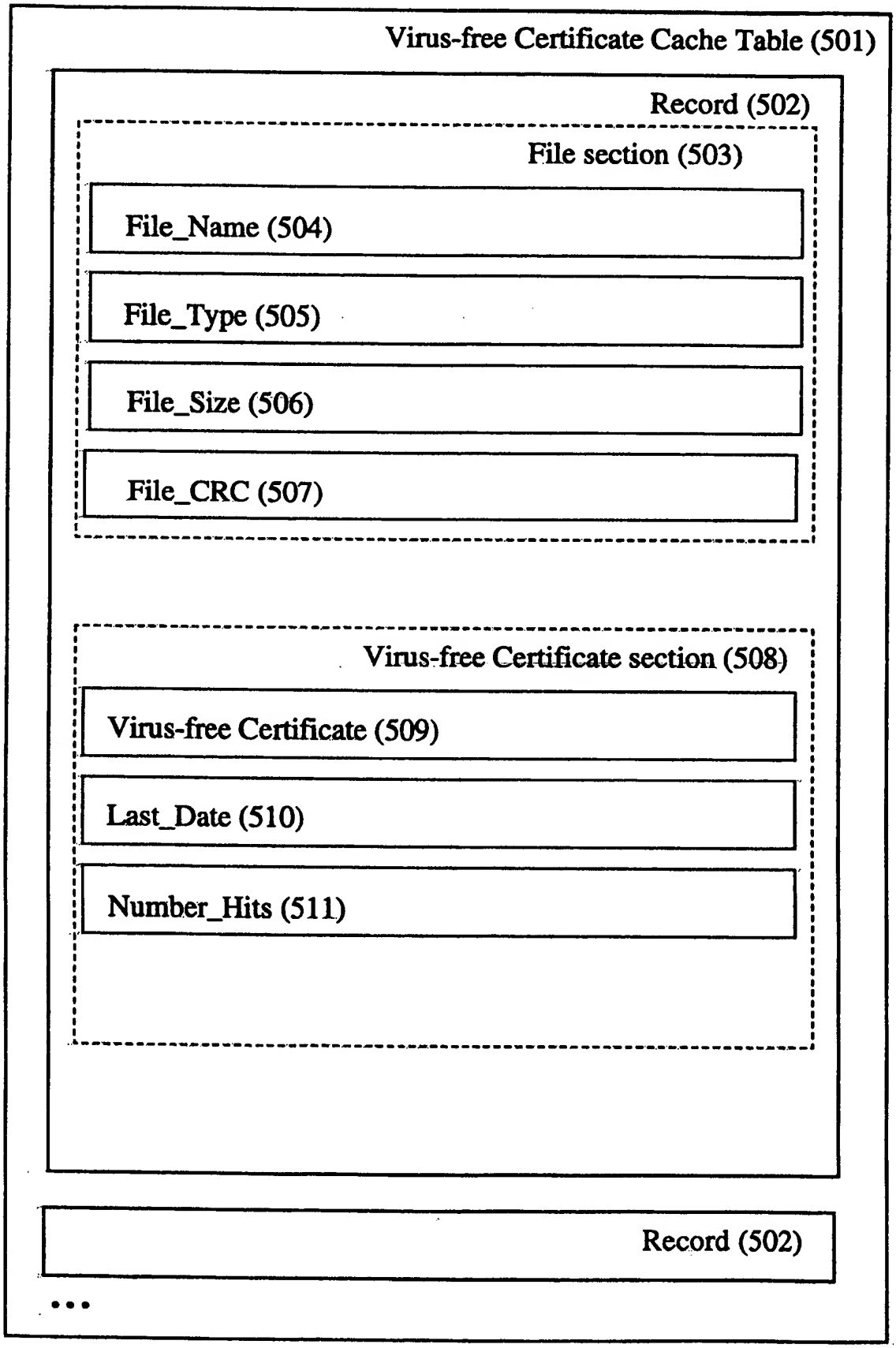
Virus-free Certificate Cache Table (501)
Record (502)
File section (503)
File_Name (504)
File_Type (505)
File_Size (506)
File_CRC (507)
Virus-free Certificate section (508)
Virus-free Certificate (509)
Last_Date (510)
Number_Hits (511)
Record (502)

FIG. 5

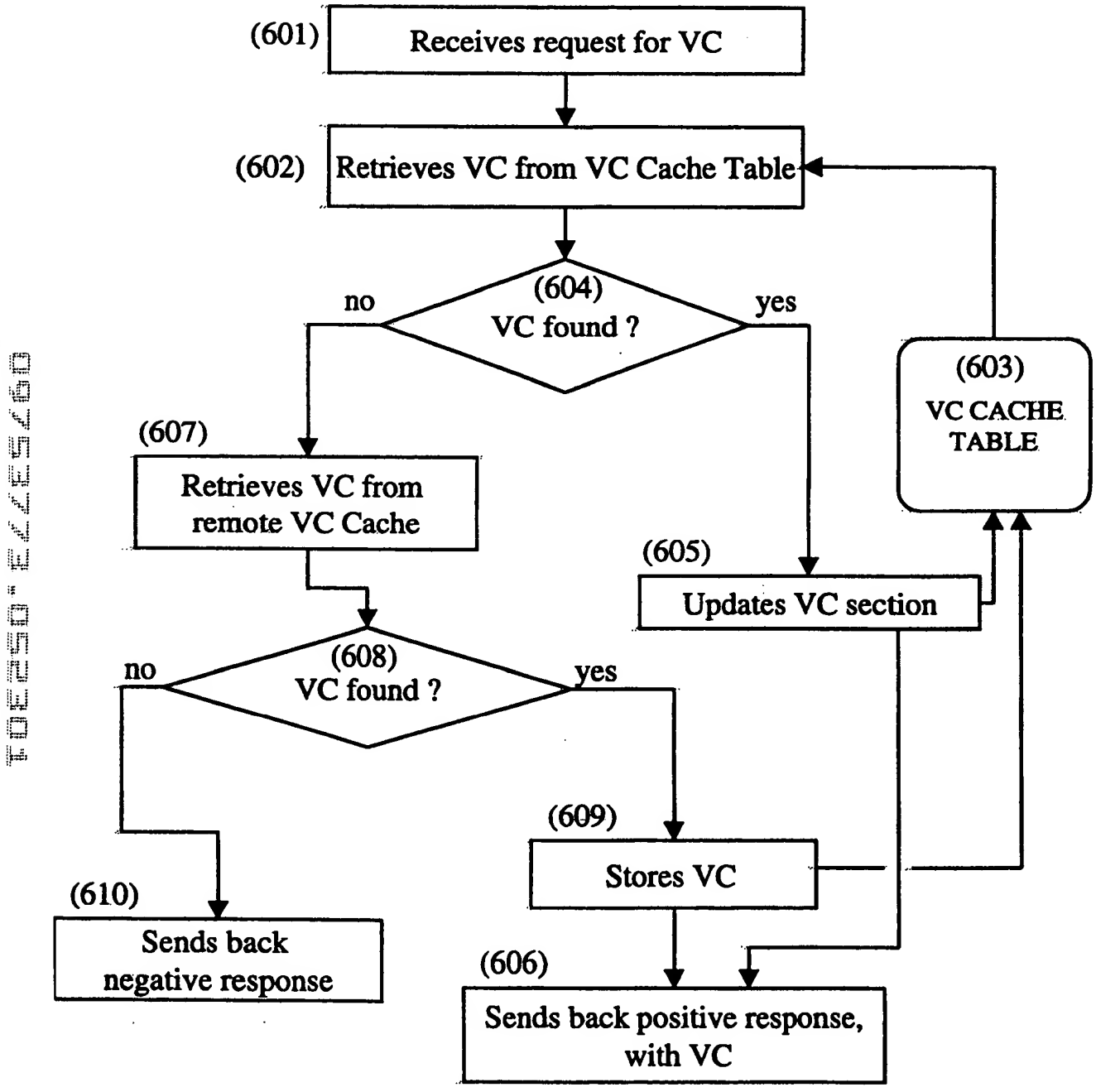
(601)
Receives request for VC
(602)
Retrieves VC from VC Cache Table
(604)
VC found ?
no
yes
(603)
VC CACHE TABLE
(607)
Retrieves VC from remote VC Cache
(605)
Updates VC section
(608)
VC found ?
no
yes
(609)
Stores VC
(610)
Sends back negative response
(606)
Sends back positive response, with VC

FIG. 6

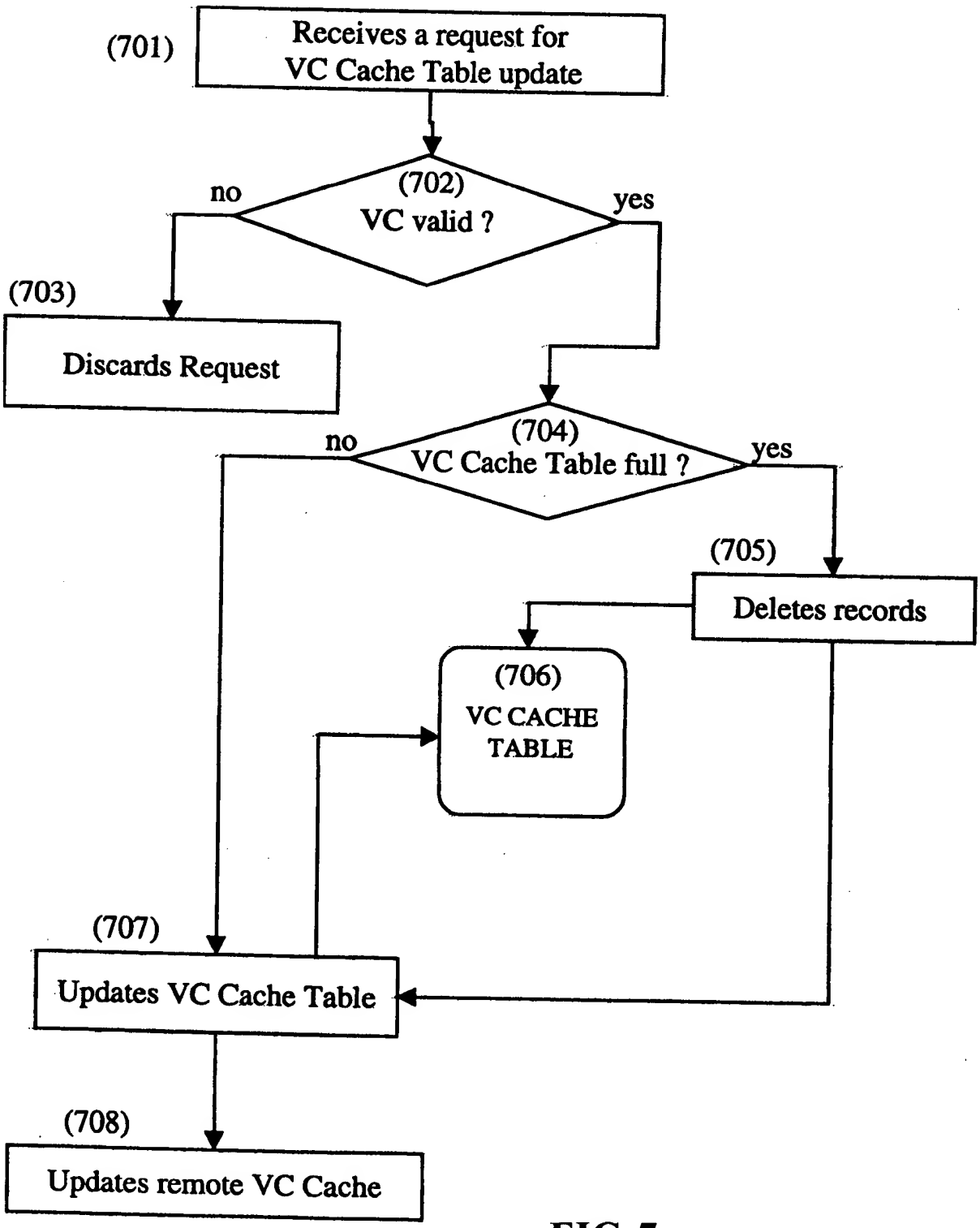
(701)
Receives a request for VC Cache Table update
(702)
VC valid ?
no
yes
(703)
Discards Request
(704)
VC Cache Table full ?
no
yes
(705)
Deletes records
(706)
VC CACHE TABLE
(707)
Updates VC Cache Table
(708)
Updates remote VC Cache

FIG. 7

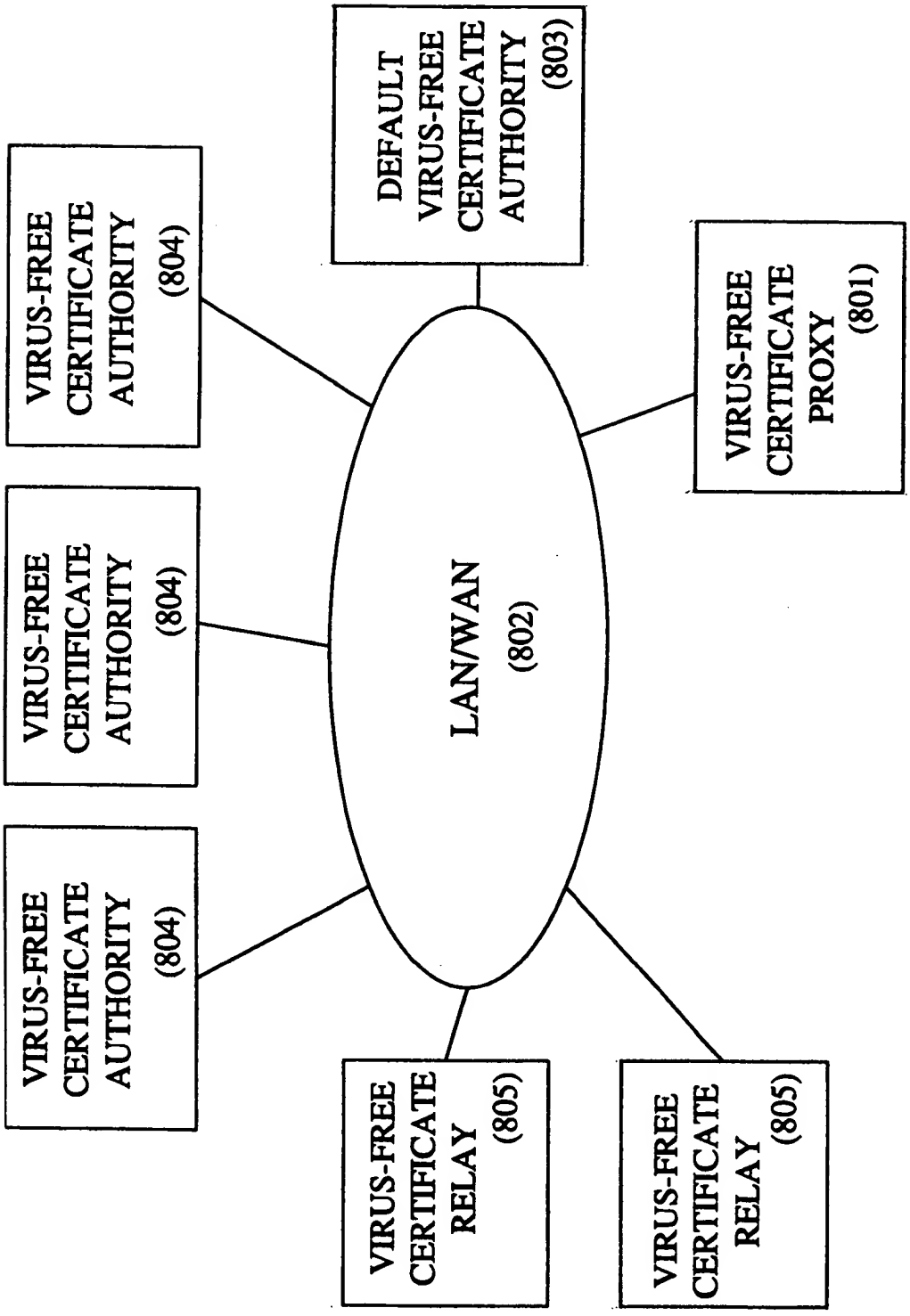
DEFAULT VIRUS-FREE CERTIFICATE AUTHORITY (803)
VIRUS-FREE CERTIFICATE AUTHORITY (804)
VIRUS-FREE CERTIFICATE AUTHORITY (804)
VIRUS-FREE CERTIFICATE AUTHORITY (804)
VIRUS-FREE CERTIFICATE PROXY (801)
LAN/WAN (802)
VIRUS-FREE CERTIFICATE RELAY (805)
VIRUS-FREE CERTIFICATE RELAY (805)

FIG. 8

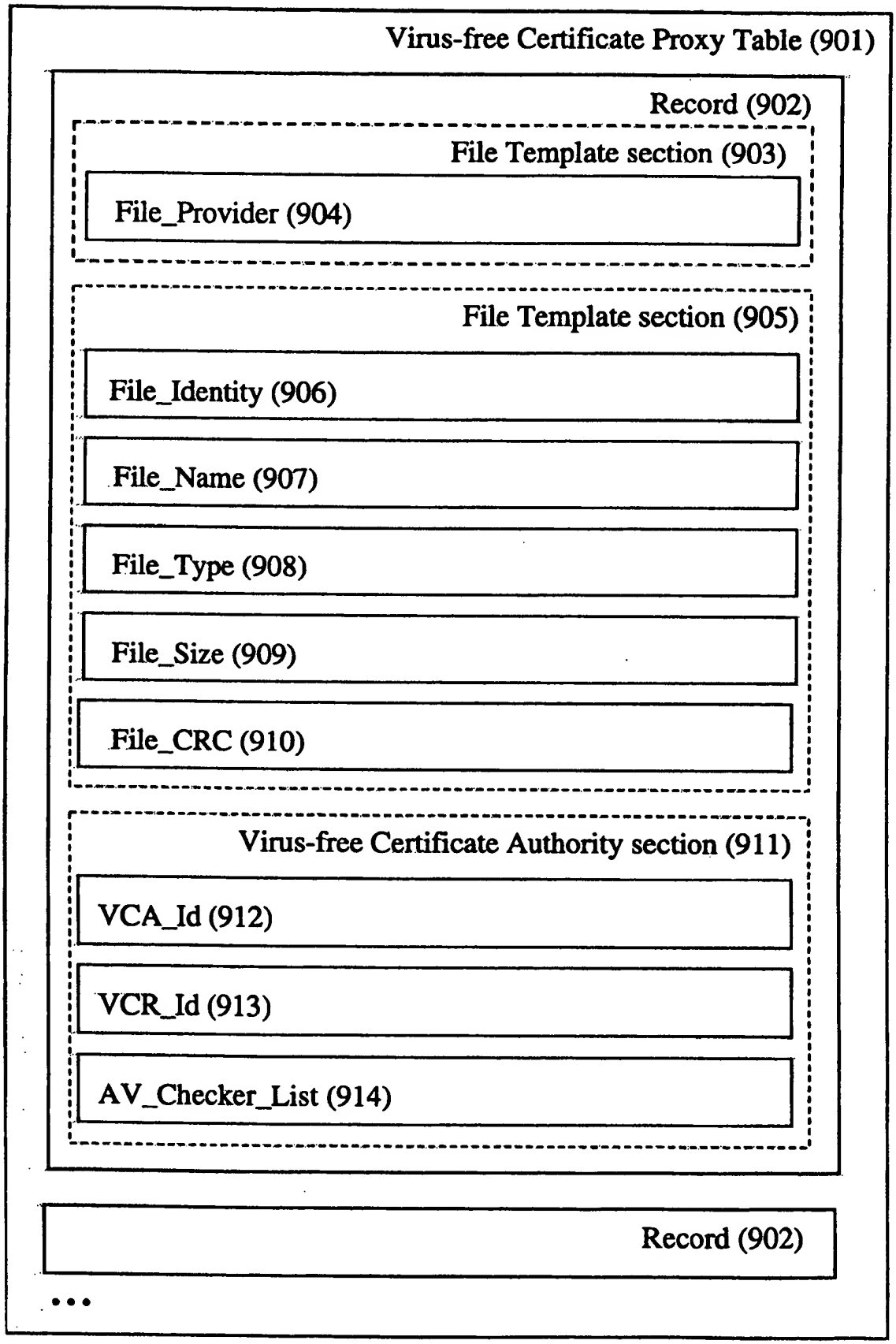
Virus-free Certificate Proxy Table (901)
Record (902)
File Template section (903)
File_Provider (904)
File Template section (905)
File_Identity (906)
File_Name (907)
File_Type (908)
File_Size (909)
File_CRC (910)
Virus-free Certificate Authority section (911)
VCA_Id (912)
VCR_Id (913)
AV_Checker_List (914)
Record (902)
...

FIG. 9

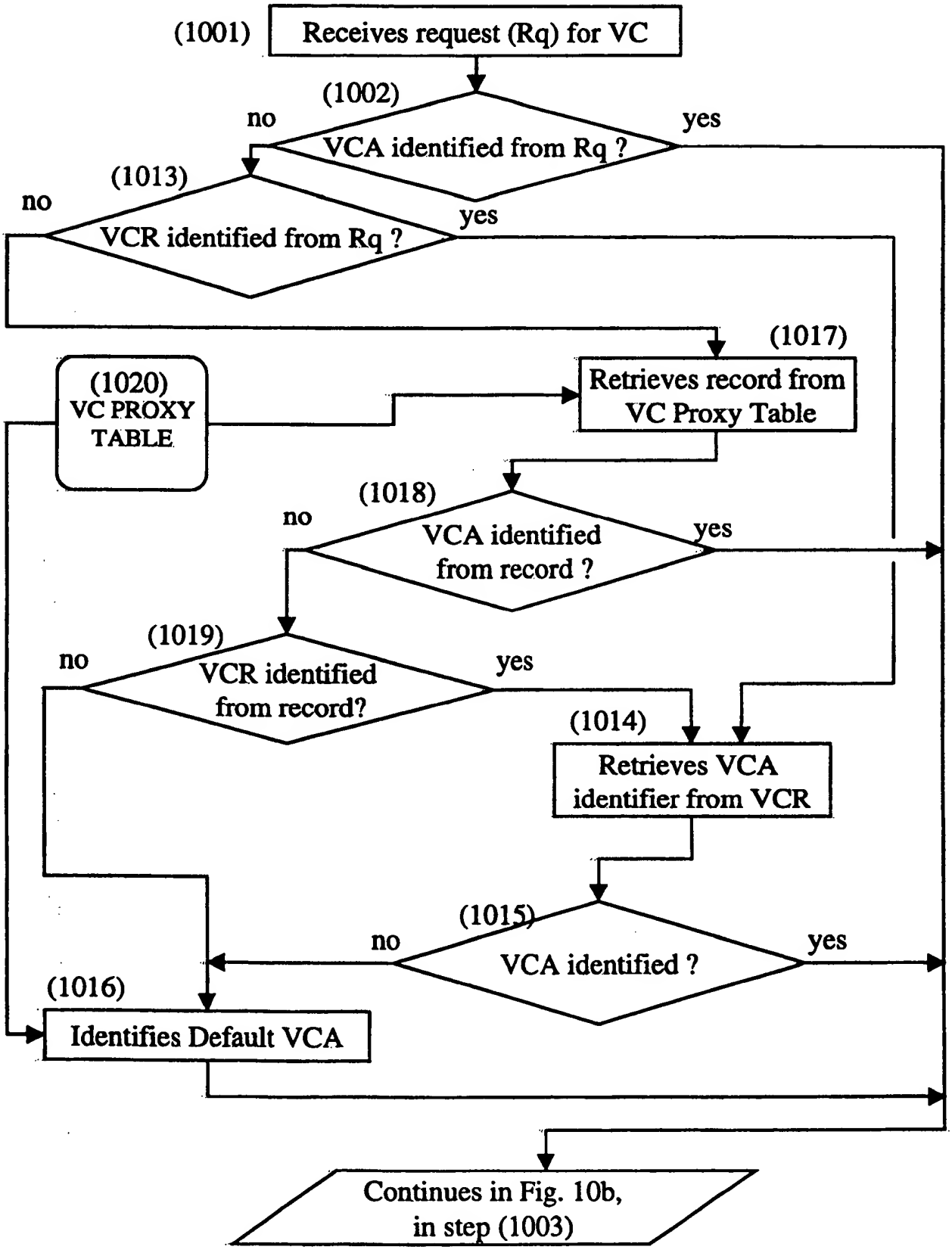
(1001)
Receives request (Rq) for VC
(1002)
no
VCA identified from Rq ?
yes
(1013)
no
VCR identified from Rq ?
yes
(1017)
(1020)
VC PROXY
TABLE
Retrieves record from
VC Proxy Table
(1018)
no
VCA identified
from record ?
yes
(1019)
no
VCR identified
from record?
yes
(1014)
Retrieves VCA
identifier from VCR
(1015)
no
VCA identified ?
yes
(1016)
Identifies Default VCA
Continues in Fig. 10b,
in step (1003)

FIG. 10

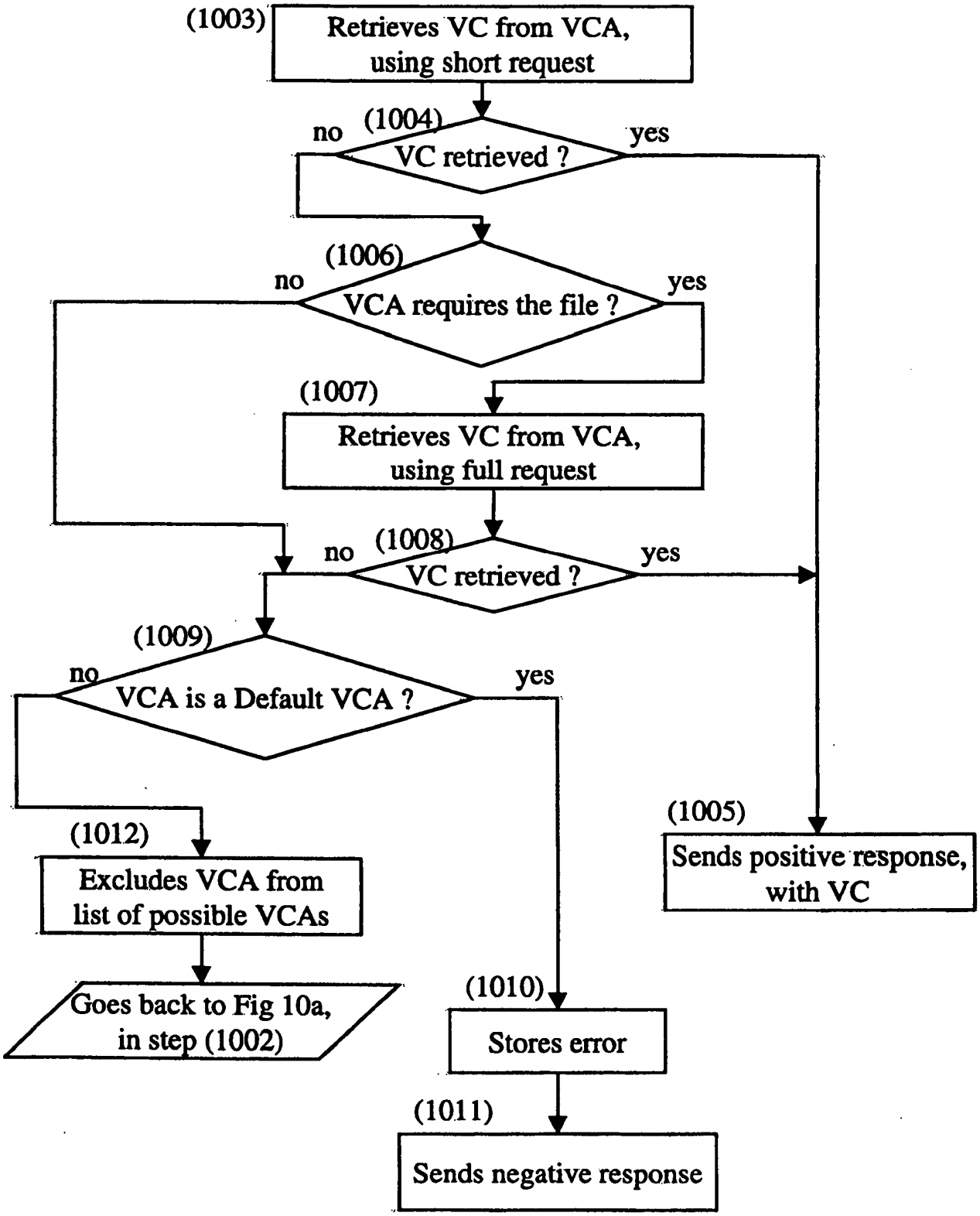
(1003)
Retrieves VC from VCA, using short request
(1004)
no
VC retrieved ?
yes
(1006)
no
VCA requires the file ?
yes
(1007)
Retrieves VC from VCA, using full request
(1008)
no
VC retrieved ?
yes
(1009)
no
VCA is a Default VCA ?
yes
(1012)
Excludes VCA from list of possible VCAs
Goes back to Fig 10a, in step (1002)
(1005)
Sends positive response, with VC
(1010)
Stores error
(1011)
Sends negative response

FIG. 11